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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/531,990	04/20/2005	Kenji Suzuki	270573US0PCT	6522
22850 7590 10/04/2010 OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER BERMAN, SUSAN W				
ART UNIT 1796		PAPER NUMBER		
NOTIFICATION DATE 10/04/2010		DELIVERY MODE ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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# Office Action Summary

**Application No.**

10/531,990

**Applicant(s)**

SUZUKI ET AL.

**Examiner**

/Susan W. Berman/

**Art Unit**

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 September 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 7-14, 23-27, 29 and 31-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7-14, 23-27, 29, 31-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-089)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 09-14-2010 has been entered.

***Claim Rejections - 35 USC § 102/103***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7-14 and 23-27 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by or, alternatively, under 35 U.S.C. 102(b) as being obvious over JP 11-060835, as disclosed in the translation filed by Applicant. J '835 discloses compositions for producing molded products. The compositions comprise an aromatic vinyl/hydrogenated diene block copolymer and a propylene resin. The propylene resin is described in paragraph [0015]. Electron beam curing is

taught in paragraph [0021]. Styrene,  $\alpha$ -methyl styrene and alkyl-substituted styrenes, including p-methyl styrene and t-butyl styrene, and dienes, including butadiene and isoprene, are taught in paragraph [0017]. The mass ratio of block copolymer to propylene resin is taught in paragraph [0033]. The % by mass polymer block A in claim 25 is taught in paragraph [0011]. The number average molecular weight of claim 27 is taught in paragraph [0018]. J '835 discloses, in comparative Example 2, that a lower ratio of shear viscosity to elongation viscosity and a lower melt tension are obtained when the block copolymer is not crosslinked before or after molding.

The instant claims are drawn to a molded article obtained by molding the recited resin composition and exposing the molded resin to an active energy ray to crosslink the resin composition. The molded article comprises the crosslinked product of the copolymer block (I) and the polyolefin resin (II), both as defined in claim 1. The molded article would be expected to have the same properties whether the composition is crosslinked by exposure to radiation after molding, as set forth in the instant claims, or by exposure to radiation before molding as taught by J '835, in the absence of evidence to the contrary. With respect to claims 11-14, although J '835 does not discuss adding a photoinitiator and exposure to ultraviolet radiation, the molded article instantly claimed would be expected to have the same properties when the composition is crosslinked by ultraviolet radiation in the presence of a photoinitiator and when crosslinked by electron beam radiation as taught by J '835, in the absence of evidence to the contrary.

The comparative data in the Suzuki Declaration filed 01-09-2008 has been considered. The comparative data shows that a molded article obtained by molding the article and subsequently subjecting the article to crosslinking has significantly different properties than a molded article obtained by crosslinking the same composition and then molding the crosslinked

composition. However, the data presented is not persuasive of patentability for the following reasons. The block copolymer in both the Example according to the invention and the Comparative Example is a hydrogenated product of poly(p-methylstyrene/styrene)-poly(isoprene/butadiene)-poly(p-methylstyrene/styrene) triblock copolymer. Therefor, if applicant maintains that the comparative example is representative of the disclosure of J '835, then applicant admits on the record that J '835 discloses a block copolymer derived from the same monomer units as set forth in the instant claims. However, the molded article in the Suzuki Declaration prepared by crosslinking followed by molding is not representative of the teaching of J '835 closest to the instant claims. The reason is that JP '835 discloses compositions comprising polypropylene while the comparative Example contains polyethylene, which is not taught by J '835. It is known in the art that the effect of radiation on polyethylene does not predict the effect of radiation on polypropylene. Therefor, the comparative data relied upon is not representative of the cited prior art. There is no evidence of record of record to show that significantly different properties result when the polyolefin resin in the instant invention is polypropylene instead of polyethylene, as taught by J '835, and the block copolymer and polypropylene are mixed and molded before radiation crosslinking. It is known in the art that polypropylene and polyethylene have significantly different properties, thus what is obtained by exposure of polyethylene to radiation is not considered to be equivalent to and/or does not necessarily predict what would be obtained with polypropylene. No comparative data has been presented to show unexpected and significantly different properties for compositions comprising a photoinitiator and exposed to ultraviolet radiation as set forth in the instant claims compared with molded articles obtained as taught by J '835.

Claims 7-14, 23-27, 29 and 31-43 are rejected under 35 U.S.C. 102(b) as being anticipated by or, alternatively, under 35 U.S.C. 102(b) as being obvious over EP 1 923 425. EP '425 discloses molded articles obtained from thermoplastic elastomer compositions comprising a block copolymer or hydrogenated product thereof having a block obtained from aromatic vinyl monomer units and a block obtained from conjugated diene units in combination with a polyolefin (page 4, lines 11-22). The aromatic vinyl monomer is an alkyl styrene monomer having an alkyl groups bonded to the benzene ring (page 3, lines 16-20). Polyolefins including polyethylenes are taught in paragraph [0049]. The disclosed method for forming the molded article is dynamic vulcanization in the melt while applicant sets forth irradiation crosslinking (paragraphs [0061]-[0063]).

The instant claims are drawn to a molded article obtained by molding the recited resin composition and exposing the molded resin to an active energy ray to crosslink the resin composition. The molded article comprises the crosslinked product of the copolymer block (I) and the polyolefin resin (II), both as defined in claim 1 or claim 31. The articles obtained by the method disclosed by EP '425 wherein the block copolymer and polyolefin are crosslinked by vulcanization are considered to anticipate the instant claims because the crosslinked product would be expected to have the same properties independent of the method for crosslinking, in the absence of evidence to the contrary. With respect to claims 11-14 and 35-36, although EP '425 does not discuss adding a photoinitiator and exposure to ultraviolet radiation, the claims are drawn to the crosslinked products disclosed by EP '425 would be expected to have the same

properties as the instantly claimed composition crosslinked by ultraviolet radiation in the presence of a photoinitiator, in the absence of evidence to the contrary.

Claims 7-14, 23-27, 29 and 31-43 are rejected under 35 U.S.C. 102(b) as being anticipated by or, alternatively, under 35 U.S.C. 102(b) as being obvious over Ho et al (6,437,014). Ho et al disclose elastic articles and a method for making the articles. The method comprises forming or shaping a composition a homogeneously branched ethylene interpolymer combined with a hydrogenated block copolymer and subjecting the article to ionizing radiation during or after shaping to cure and crosslink (column 5, line 50, to column 6, line 7, and column 8, lines 50-67, and column 12, lines 12-20). The hydrogenated block copolymer contains at least one block of hydrogenated polymerized vinyl aromatic monomer and at least one block of hydrogenated polymerized conjugated diene monomer (column 12, lines 35-62). The vinyl aromatic monomers include styrene,  $\alpha$ -methylstyrene, ethyl styrene, propyl styrene and butyl styrene (column 13, lines 20-44). Linear ethylene polymers are described in column 19, lines 17-59. Samples prepared by shaping to form fibers by melt-spinning using a die for shaping are taught in column 28, lines 1-8.

The instant claims are drawn to a molded article obtained by molding the recited resin composition and exposing the molded resin to an active energy ray to crosslink the resin composition. The molded article comprises the crosslinked product of the copolymer block (I) and the polyolefin resin (II), as defined in claim 7 or claim 31. The shaped articles disclosed by Ho et al wherein the embodiment of a combination of ethylene interpolymer and hydrogenated block copolymer is irradiated are considered to anticipate the instant claims. With respect to

claims 11-14 and 35-36, although Ho et al do not discuss adding a photoinitiator and exposure to ultraviolet radiation, the claims are drawn to a molded article and the shaped articles when crosslinked by electron beam radiation as taught by Ho et al would be expected to have the same properties as the instantly claimed composition having been crosslinked by ultraviolet radiation in the presence of a photoinitiator, in the absence of evidence to the contrary.

Claim 44 is rejected under 35 U.S.C. 102(b) as being anticipated by Ho et al (6,437,014). See the discussion of the disclosure of Ho et al set forth herein above. Ho et al disclose a method comprising forming or shaping a composition a homogeneously branched ethylene interpolymer combined with a hydrogenated block copolymer and subjecting the article to ionizing radiation during or after shaping to cure and crosslink (column 5, line 50, to column 6, line 7, and column 8, lines 50-67, and column 12, lines 12-20).

### ***Conclusion***

Audett et al (5,376,503) is cited as art of interest for disclosing radiation crosslinking of a functionalized copolymer of an isoolefin and para-alkylstyrene. The radiation can be electron beam or actinic radiation in the presence of a photoinitiator. Audett et al teach addition of hydrocarbon tackifiers (column 16).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to /Susan W. Berman/ whose telephone number is 571 272 1067. The examiner can normally be reached on M-F 9:30-6:00.



If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Scidleck can be reached on 571 272 1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SB  
9/28/2010

/Susan W Berman/  
Primary Examiner  
Art Unit 1796